

Amended Claims under
Article 19 on August
26, 2005.

AMENDED CLAIMS

1. An on-vehicle radio device that acquires identification information for unlocking a lock device of a vehicle from a portable radio device having said identification information recorded therein by radio communication with said portable radio device, comprising:

human detection means of detecting a person;

variable frequency signal generating means;

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means in accordance with a detection signal of said human detection means;

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space; and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means.

2. An on-vehicle radio device that acquires identification information for unlocking a lock device of a vehicle from a portable radio device having said identification information recorded therein by radio communication with said portable radio device, comprising:

radio wave measuring means of measuring radio wave intensity in the outer space of said on-vehicle radio device for each of predetermined frequency bands;

variable frequency signal generating means;

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means to one of the frequency bands for which said radio wave measuring means measures the lowest radio wave intensity;

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space; and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means.

3. The on-vehicle radio device according to claim 1, wherein said band changing means is activated when said human detection means detects a person.

4. The on-vehicle radio device according to claim 2, wherein said radio measuring means measures radio wave intensity when said on-vehicle radio device is in a transmission wait state.

5. The on-vehicle radio device according to claim 1 or 3, wherein the frequency band of a signal transmitted from said

portable radio device to said on-vehicle radio device is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device.

6. The on-vehicle radio device according to claim 1 or 3, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device based on discrete variable values of a sine function stored in a table.

7. The on-vehicle radio device according to claim 1 or 3, wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table and modulates a predetermined code with the carrier wave, thereby generating the signal to be transmitted to said portable radio device.

8. The on-vehicle radio device according to claim 1 or 3, wherein said band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means.

9. The on-vehicle radio device according to claim 2 or 4, wherein the frequency band of a signal transmitted from said

portable radio device to said on-vehicle radio device is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device.

10. The on-vehicle radio device according to claim 2 or 4, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device based on discrete variable values of a sine function stored in a table.

11. The on-vehicle radio device according to claim 2 or 4, wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table and modulates a predetermined code with the carrier wave, thereby generating the signal to be transmitted to said portable radio device.

12. The on-vehicle radio device according to claim 2 or 4, wherein said band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means.